REMARKS

Claims 1-31 are pending in this Application, of which Claim 1 is the independent claim. All claims stand rejected.

Claim 1 is being amended to further clarify the scope of the invention, stating that the "Programmable Streaming Data Processors" are "configured to perform filtering functions directly on data received from the streaming data interface." Support for this amendment is found at least on page 28, line 27 – page 29, line 7 of the Specification as originally filed. Claims 3, 16, 17, 20 and 21 are being amended with regard to the Claim 1 amendment above.

Objections to the Specification

The Abstract has been objected to for including the Title on the same page of the Application. The Abstract is being amended to correct this error.

Double Patenting

Claim 1 has been rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent Application No. 10/666,729, and over claim 1 of U.S. Patent No. 10/667,128. A Terminal Disclaimer is being filed concurrently with this Amendment to disclaim any terminal part of a patent that may issue from the Application that extends beyond the expiration of U.S. Patent Applications No. 10/666,729 and 10/667,128. Accordingly, the double patenting rejection of Claims 1 is believed to be overcome.

Rejection of Claims 6, 10, 23 and 30 under 35 U.S.C. § 112

Claims 6, 10, 23 and 30 have been rejected under 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. Specifically, these claims are objected to for reciting "and/or." Claims 6, 10, 23 and 30 are being amended to correct this error. As a result, the § 112 rejection of Claims 6, 10, 23 and 30 is believed to be overcome.

Rejection of Claims 1-8, 10, 11 and 14-31 under 35 U.S.C. § 102(e)

Claims 1-8, 10, 11 and 14-31 have been rejected under 35 U.S.C. § 102 as being anticipated by Kabra et al. (U.S. Patent No. 6,507,834). Applicants disagree with this rejection and respectfully request reconsideration.

Amended Claim 1 is directed to an asymmetric data processor comprising one or more host computers, a plurality of Job Processing Units (JPUs), and a network connecting the host(s) and JPUs. To aid in understanding the present invention, Applicants refer to an exemplary embodiment in Figs. 1 and 7 of their Specification. Here, a host computer 12 communicates with Job Processing Units (JPUs) 22 via a network 34, where each JPU 22 may access data at respective storage devices 23.

In an example operation, the host computer 12 receives requests from a requester 33, 36, 38 (e.g., a client computer or application) to process data stored at a plurality of storage devices 23 (e.g. hard disk drives). A plan generator (204 at Fig. 3) at the host computer 12 generates a plan for processing the request (Specification, page 45, lines 1-5). The plan comprises a number of jobs, which are distributed among the JPUs 22-1 – 22-3 (Fig. 7) and host computer 12 (Specification, page 46, lines 4-14). Each job further comprises a sequence of instructions that are executed by the JPUs 22-1 – 22-3.

In completing these jobs, each JPU 22 accepts and responds to requests from the host 12 and from other JPUs 22 (Specification, page 7, lines 1-5 and page 14, lines 7-27). Each JPU 22 further includes a Programmable Streaming Data Processor (PDSP) 28. The PDSP 28 serves as an interface between the JPU 22 and the storage device 23, and can filter data retrieved from the storage device 23 (Specification, page 7, lines 19-26). Such filtering operations are also performed in a streaming fashion, "on the fly" as the data is read as records streaming from the storage device 23 (Specification, page 8, lines 26-28). Once completed, results of the data processing may then be transmitted to the requester 33, 36, 38.

Kabra discloses a method for parallel execution of queries at multiple data servers (Kabra, Abstract). As shown in Fig. 1, a query coordinator (QC) 104 receives a query from a client process 102 (col. 7, lines 27-37). The QC 104 generates an execution plan for the query and transmits portions of the plan to several data servers 130A-E. The QC 104 controls the parallel execution of the plan on the data servers 130. Fig. 6A illustrates this process, where the

data servers 130A-B each receive a portion of the execution plan (610A-B), and then execute that portion of the plan (612A-B) (col. 11, lines 29-38). The data servers 130A-B transmit results of the execution to the QC 104, which compiles the results and transmits the compiled results to the client 102.

Kabra does not disclose a data processor arranged as recited in Claim 1. As stated above, Kabra describes a method of coordinating parallel execution of a query on multiple data servers. In contrast to the JPU of the present invention, however, the data servers 130 of Kabra are not responsive to "requests from other JPUs" to process data (emphasis added). As shown in Fig. 6A, each data server 130A-B executes a respective portion of the plan without communicating with one another. Although the Office Action cites Kabra at col. 7, lines 19-26, this passage merely describes transport protocol "between the QC 104 and any one of the DS 130 elements," and does not describe communication between data servers 130.

On the contrary, Kabra teaches away from such communication: "...it is difficult to obtain and execute queries from within...one data server 130 when the data that is the subject of the [query] may reside on different data servers" (col. 12, line 65 – col. 13, line 3). Kabra teaches "preprocessing" at the QC 104 to avoid a need to access data on one data server from another data server 130 (col. 13, lines 14-24). In contrast, embodiments of the present invention do not encounter such a problem because each JPU is responsive to "requests from other JPUs" to process data. Thus, Kabra actually teaches away from the present invention.

Moreover, Kabra does not disclose a Programmable Streaming Data Processor (PSDP). The Office Action refers to a "direct data transfer module" and a "valise" in Kabra as referring to a PSDP (col. 10, lines 49-50 and col. 9, lines 31-34). Yet neither component of Kabra relates to a PSDP. A PSDP, as defined in Applicant's Specification, is "programmable to also interpret data in a specific format," through which "data can be filtered... in a streaming fashion, as data is read as records stream out of" a connected input (Specification, page 7, lines 19-26 and page 8, lines 26-28). No component in Kabra is disclosed as having such programmable or streaming operation. Thus, Kabra fails to disclose a PSDP as recited in Claim 1.

Claims 2-8, 10, 11 and 14-31 each depend from Claim 1 and thus are allowable at least for the reasons stated above. As a result, the §102 rejection of Claims 1-8, 10, 11 and 14-31 is believed to be overcome, and reconsideration is respectfully requested.

Rejection of Claims 9, 12 and 13 under 35 U.S.C. § 103

Claims 9, 12 and 13 have been rejected under 35 U.S.C. § 103 as being unpatentable over Kabra in view of Ozbutun (U.S. Patent No. 6,658,405).

Ozbutun discloses methods indexing bodies of records, and does not relate to a data processor having first and second groups of nodes; nor does it relate to a programmable streaming data processor. Given the aforementioned shortcomings of Kabra, no combination of Kabra and Ozbutun teaches or suggests the present invention as recited in Claims 9, 12 and 13. Thus, the §103 rejection of Claims 9, 12 and 13 is believed to be overcome.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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